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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,531	09/10/2003	John Roger Weber	8350.3104	1879

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EXAMINER

TRIEU, THAI BA

ART UNIT PAPER NUMBER

3748

DATE MAILED: 01/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/658,531	<b>Applicant(s)</b> WEBER, JOHN ROGER	
	<b>Examiner</b> Thai-Ba Trieu	<b>Art Unit</b> 3748	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-20 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/16/2003</u> . | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Moody (Patent Number 2,060,101).***

Moody discloses a connecting duct for providing a fluid pathway between an outlet of a low pressure compressor and an inlet of a high pressure compressor, comprising:

a main body (8) defining a fluid pathway adapted to direct a flow of fluid between a main body inlet (Not Numbered) and a main body outlet (9), the main body including:

a diffusing section (transitional space 19) adapted to decrease a velocity of the flow of fluid; and

a flow de-swirling section (elbow section of the draft tube 8) disposed between the diffusing section (transitional space 19) and the main body outlet (9), the flow de-swirling section adapted to straighten the flow of fluid (See Figures 11 and 14, Page 2, Column 1, lines 21-30, Page 3, Column 1, lines 70-75, and Column 2, lines 1-4);

wherein the main body (8) has a substantially circular cross-sectional shape (See Figures 11 and 14);

wherein the diffusing section (transitional space 19) has an inlet and an outlet (Not Numbered) and wherein the cross-sectional area of the diffusing section outlet is greater than the cross-sectional area of the diffusing section inlet (Clearly seen in Figures 11 and 14);

wherein the flow de-swirling section includes an arcuate portion (See Figures 11 and 14);

wherein the arcuate portion changes a direction of the flow of fluid between about 90° and 180° (See Figures 11 and 14);

a turning vane (16, 20) disposed in the de-swirling section (elbow section of the draft tube 8) and adapted to reduce the magnitude of turbulence in the flow of fluid (See Figures 11 and 14, Page 3, Column 1, lines 70-75, and Column 2, lines 1-4);

wherein a leading edge of the turning vane is disposed to engage the flow of fluid after the flow of fluid has passed through a predetermined distance in the arcuate portion (See Figures 11 and 14).

***Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Leaycraft (Patent Number 411,864).***

(See the entire document).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

***Claims 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zehnder (Patent Number 4,032,262), in view of Moody (Patent Number 2,060,101).***

Zehnder discloses a system for compressing a fluid, comprising:

a first compressor/first compressing means (6) having an inlet (Not Numbered) and an outlet (Not Numbered) (See Figures 1-3);

a second compressor/second compressing means (3) having an inlet (Not Numbered) and an outlet (Not Numbered) (See Figures 1-3);

a duct (13) having a main body adapted to direct a flow of fluid between the outlet of the first compressor and the inlet of the second compressor (See Figures 1-3);

a first turbine (5) adapted to drive the first compressor (6); and

a second turbine (2) adapted to drive the second compressor (3) (See Figures 1-3).

However, Zehnder fails to disclose the structural details of the main body.

Moody teaches that it is conventional in the hydraulic power apparatus art, to utilize a diffusing section (transitional space 19) adapted to decrease a velocity of the flow of fluid;

a flow de-swirling section (elbow section of the draft tube 8) disposed between the diffusing section (transitional space 19) and the main body outlet

(9), the flow de-swirling section adapted to straighten the flow of fluid (See Figures 11 and 14, Page 2, Column 1, lines 21-30, Page 3, Column 1, lines 70-75, and Column 2, lines 1-4);

wherein the diffusing section (transitional space 19) has an inlet and an outlet (Not Numbered) and wherein the cross-sectional area of the diffusing section outlet is greater than the cross-sectional area of the diffusing section inlet (Clearly seen in Figures 11 and 14);

wherein the flow de-swirling section includes an arcuate portion (See Figures 11 and 14);

wherein the arcuate portion changes a direction of the flow of fluid between about  $90^\circ$  and  $180^\circ$  (See Figures 11 and 14); and

a turning vane (16, 20) disposed in the de-swirling section (elbow section of the draft tube 8) and adapted to reduce the magnitude of turbulence in the flow of fluid (See Figures 11 and 14, Page 3, Column 1, lines 70-75, and Column 2, lines 1-4);

wherein a leading edge of the turning vane is disposed to engage the flow of fluid after the flow of fluid has passed through a predetermined distance in the arcuate portion (See Figures 11 and 14).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the structural details, as taught by Moody, to improve the efficiency of the Zehnder turbocharger system.

***Claims 9-13, 14-17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zehnder (Patent Number 4,032,262), in view of Leaycraft (Patent Number 411,864).***

Zehnder discloses a method and a system for compressing a fluid, comprising:

- a first compressor/first compressing means (6) having an inlet (Not Numbered) and an outlet (Not Numbered) (See Figures 1-3);

- a second compressor/second compressing means (3) having an inlet (Not Numbered) and an outlet (Not Numbered) (See Figures 1-3);

- a duct (13) having a main body adapted to direct a flow of fluid between the outlet of the first compressor and the inlet of the second compressor (See Figures 1-3);

- a first turbine (5) adapted to drive the first compressor (6); and

- a second turbine (2) adapted to drive the second compressor (3) (See Figures 1-3).

However, Zehnder fails to disclose the structural details of the main body.

Leaycraft teaches that it is conventional in the hydraulic power apparatus art, to utilize a diffusing section (E connected with H) adapted to decrease a velocity of the flow of fluid;

- a flow de-swirling section (E to E section) disposed between the diffusing section and the main body outlet (via B), the flow de-swirling section adapted to straighten the flow of fluid (See Figure 1);

wherein the diffusing section (H connected to E) has an inlet (Not Numbered) and an outlet (Not Numbered) and wherein the cross-sectional area of the diffusing section outlet is greater than the cross-sectional area of the diffusing section inlet (Clearly seen in Figure 1);

wherein the flow de-swirling section includes an arcuate portion (See Figure 1); and

wherein the arcuate portion changes a direction of the flow of fluid between about 90° and 180° (See Figure 1).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the structural details, as taught by Leaycraft, to improve the efficiency of the Zehnder turbocharger system.

#### ***Allowable Subject Matter***

Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

The IDS (PTO-1449) filed on October 16, 2003 has been considered. An initialized copy is attached hereto.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.



- Faletti (Patent Number 6,655,141 B1) discloses an airflow system for an engine with series turbochargers.
- Nichtawitz et al. (US Patent number) disclose partial splitter vane for reaction hydraulic turbine.
- Stock et al. (US Patent number 4,986,732) disclose a steam turbine crossover piping with reduced turning losses.
- Leon Levin (US Patent number 3,623,511) discloses tubular conduits having a bent portion and carrying a fluid.
- Markowski (US Patent number 3,490,236) discloses flow separation control in an exhaust deflector.
- Dimmock (US Patent number 2,662,553) discloses gaseous fluid flow system.
- Jessop et al. (US Patent number 1,955,070) disclose draft tube.
- Kaplan (US Patent number 1,467,168) discloses a draft tube.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (571) 272-4867. The examiner can normally be reached on Monday - Thursday (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

TTB

January 20, 2005



Thai-Ba Trieu  
Primary Examiner  
Art Unit 3748